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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.



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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/527,007  
Filing Date: March 07, 2005  
Appellant(s): SCHOELLER ET AL.

**MAILED**

**AUG 17 2007**

**GROUP 2800**

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Dicran Halajian  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed May 15, 2007 appealing from the Office action mailed December 18, 2006.

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**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

6,670,765	MUTO	12-2003
4,047,069	AKUTSU	9-1977

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1-2 and 4-15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Muto (US 6,670,765) in view of Akutsu et al. (US 4,047,069).

Regarding claim 1, Muto discloses a high-pressure discharge lamp (item 10) in figure 1 comprising: an inner vessel with a discharge chamber (item 2), with at least two electrodes (item 3) extending into the discharge chamber, and an outer bulb surrounding the inner vessel (FIG.1, item 1), wherein the discharge chamber contains an ionizable filling comprising: at least one rare gas (column 9, lines 45-47), 0 mg to 10 mg of mercury (column 11, lines 37-41) and a metal

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halide mixture comprising: 40 to 80% by weight of sodium halide (column 9, line 40), 25 to 55% by weight of scandium halide (column 9, line 40), 1 to 15% by weight of indium halide (column 5, lines 23-26), and 0 to 34% by weight of thallium halide, but does not expressly disclose that the outer bulb comprises neodymium oxide, the neodymium oxide content being substantially 2 to 20% by weight with respect to the total weight of the outer bulb, as claimed by Applicant.

Akutsu is cited to show a discharge lamp in figure 1 with a bulb (item 23) that contains neodymium (column 3, lines 47-48). Akutsu teaches that when neodymium oxide is present on the outer bulb, light transmissivity can be increased (see FIG. 2). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the outer bulb comprises neodymium oxide, the neodymium oxide content being substantially 2 to 20% by weight with respect to the total weight of the outer bulb, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Muto's invention to include the outer bulb comprising neodymium oxide, the neodymium oxide content being substantially 2 to 20% by weight with respect to the total weight of the outer bulb as suggested by Akutsu for increasing light transmissivity.

Regarding claim 2, the combined reference of Muto and Akutsu disclose the high-pressure discharge lamp as claimed in claim 1, wherein a color point of the light emitted by the high-pressure discharge lamp in a CIE 1931 diagram has an X-color coordinate in a range from

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0.345 to 0.375 (Muto; see FIG. 8), and a Y-color coordinate in a range from 0.350 to 0.375 (Muto; see FIG. 8).

Regarding claim 4, the combined reference of Muto and Akutsu disclose the high-pressure discharge lamp as claimed in claim 1, wherein a color temperature of light emitted by the high-pressure discharge lamp lies in a range from 4300 K to 5000 K (Muto; see FIGS. 7 and 8 and column 10, lines 21-35).

Regarding claim 5, the combined reference of Muto and Akutsu disclose the high-pressure discharge lamp as claimed in claim 1, wherein luminous efficacy of light emitted by the high-pressure discharge lamp is at least  $\geq 70$  lm/W (Muto; see FIGS. 5 and 7 and column 9, lines 15-17).

Regarding claim 6, the combined reference of Muto and Akutsu disclose the high-pressure discharge lamp as claimed in claim 1, wherein a color point change with respect to an X-color coordinate and an Y-color coordinate in a CIE 1931 diagram amounts to  $\leq 6\%$  over a period of operation of the high-pressure discharge lamp of 1500 hours (Muto; see FIGS. 7 and 8).

Regarding claim 7, the combined reference of Muto and Akutsu disclose the high-pressure discharge lamp as claimed in claim 1, wherein the at least one rare gas includes xenon (Muto; see column 9, lines 45-47), and the ionizable filling further comprises: 50 to 70% by weight of sodium iodide (Muto; see column 9, line 40), 30 to 50% by weight of scandium iodide (Muto; see column 9, line 40), 1 to 15% by weight of indium iodide (Muto; see column 5, lines 23-26), and 0 to 10 mg mercury (Muto; see column 11, lines 37-41).

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Regarding claim 8, the combined reference of Muto and Akutsu disclose the high-pressure discharge lamp as claimed in claim 1, wherein the at least one rare gas includes xenon (Muto; see column 9, lines 45-47), and the ionizable filling comprises: 50 to 60% by weight of sodium iodide (Muto; see column 9, line 40), 35 to 45% by weight of scandium iodide (Muto; see column 9, line 40), 1 to 15% by weight of indium iodide (Muto; see column 5, lines 23-26), and 0 to 10 mg mercury (Muto; see column 11, lines 37-41).

Regarding claim 9, Muto discloses a lamp comprising an inner vessel (item 2) including an ionizable filling; and an outer bulb (item 2) surrounding the inner vessel, the ionizable filling comprising: at least one rare gas (column 9, lines 45-47), 0 mg to 10 mg of mercury (column 9, lines 45-47), and a metal halide mixture comprising: 40 to 80% by weight of sodium halide (column 9, line 40), 25 to 55% by weight of scandium halide (column 9, line 40), 1 to 15% by weight of indium halide (column 5, lines 23-26), and 0 to 34% by weight of thallium halide, but does not expressly disclose that the outer bulb comprises neodymium oxide, the neodymium oxide content being substantially 2 to 20% by weight with respect to the total weight of the outer bulb, as claimed by Applicant. Akutsu is cited to show a discharge lamp in figure 1 with a bulb (item 23) that contains neodymium (column 3, lines 47-48). Akutsu teaches that when neodymium oxide is present on the outer bulb, light transmissivity can be increased (see FIG. 2). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the outer bulb comprises neodymium oxide, the neodymium oxide content being substantially 2 to 20% by weight with respect to the total weight of the outer bulb, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art.

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Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Muto's invention to include the outer bulb comprising neodymium oxide, the neodymium oxide content being substantially 2 to 20% by weight with respect to the total weight of the outer bulb as suggested by Akutsu for increasing light transmissivity.

Regarding claim 10, the combined reference of Muto and Akutsu disclose a lighting unit (Muto; column 1, lines 9-16) comprising the high-pressure discharge lamp as claimed in claim 1.

Regarding claim 11, the combined reference of Muto and Akutsu disclose the high-pressure discharge lamp of claim 1, wherein a color point of light emitting by the high-pressure discharge lamp in a CIE 1931 diagram has a X-color coordinate in a range from 0.350 to 0.370 (Muto; see FIG. 8), and Y-color coordinate in a range from 0.355 to 0.370 (Muto; see FIG. 8).

Regarding claim 12, the combined reference of Muto and Akutsu disclose the high-pressure discharge lamp of claim 1, wherein a color point of light emitting by the high-pressure discharge lamp in a CIE 1931 diagram has a X-color coordinate in a range from 0.355 to 0.360 (Muto; see FIG. 8), and Y-color coordinate in a range from 0.350 to 0.375 (Muto; see FIG. 8).

Regarding claim 13, the combined reference of Muto and Akutsu disclose the high-pressure discharge lamp of claim 1, wherein a color temperature of light emitted by the high-pressure discharge lamp lies in a range from 4700 K to 4800 K (Muto; see FIGS. 7 and 8 and column 10, lines 21-35).

Regarding claim 14, the combined reference of Muto and Akutsu disclose the high-pressure discharge lamp as claimed in claim 1, wherein luminous efficacy of light emitted by the



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high-pressure discharge lamp is at least  $\geq 75$  lm/W (Muto; see FIGS. 5 and 7 and column 9, lines 15-17).

Regarding claim 15, the combined reference of Muto and Akutsu disclose the high-pressure discharge lamp of claim 1, wherein a color point change with respect to an X-color coordinate and an Y-color coordinate in a CIE 1931 diagram amounts to  $\leq 5$  % over a period of operation of the high-pressure discharge lamp of 1500 hours (Muto; see FIGS. 7 and 8).

#### **(10) Response to Argument**

Applicant's arguments beginning at page 10, in regards to the rejection of claims 1-2 and 4-15 under 35 U.S.C. 103(a) as being unpatentable over Muto (US 6,670,765) in view of Akutsu et al. (US 4,047,069) have been considered, but are not persuasive. Applicant contends that Akutsu does not disclose the outer bulb comprising neodymium oxide, the neodymium oxide content being substantially 2 to 20% by weight with respect to the total weight of the outer bulb.

The Examiner first points to figure 1 of Akutsu, which shows an outer bulb (item 23) with an inner discharge vessel (item 1). The outer bulb is coated with neodymium oxide mixed with phosphor powder (column 3, lines 48-50). Applicant's claimed limitation of "the outer bulb comprising neodymium oxide" is not limited to a coating on the outer bulb. Comprising an item is not limited to the outer bulb having a coating of neodymium oxide. Applicant contends that the instant application has an outer bulb glass of quartz glass doped with neodymium oxide, but has failed to claim the limitation of the outer bulb doped with neodymium oxide. Hence, the outer bulb can be reasonably coated with neodymium oxide, as suggested by Akutsu, since the bulb merely comprises neodymium oxide (as stated in independent claims 1 and 9). The outer

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bulb of Akutsu has a coating, which clearly shows that the outer bulb is comprising neodymium oxide. The outer bulb comprising neodymium oxide does not preclude the bulb from having a coating of neodymium oxide.

The Examiner now points to page 5 of the instant application's specification, which discloses that neodymium oxide accounts for 2 to 20% by weight related to the total weight of the outer bulb. The specification of the instant application fails to show evidence that the neodymium oxide in the range of 2 to 20% solves any stated problem. One with scope of ordinary skill in the art, in light of the specification, would not see a problem solved by providing neodymium oxide. One with ordinary skill in the art would see that 2 to 20% is a wide range and discovering optimum or workable ranges involves only routine skill in the art. Contrary to Applicant's argument that Akutsu does not disclose the general conditions of the claim (i.e. neodymium oxide), the Examiner disagrees since clearly Akutsu discloses the outer bulb comprising neodymium oxide.

For the above stated reasons, it is considered that the Applicant has failed to provide evidence in the record to support his contention that the device as combined by Muto and Akutsu is patentably distinct from the device as covered by claims 1-2 and 4-15 of the instant application.

#### **(11) Related Proceeding(s) Appendix**

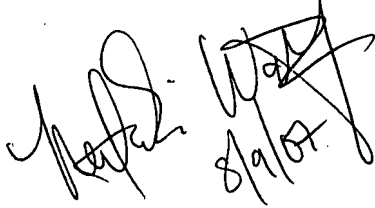
No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

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For the above stated reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Natalie K. Walford

Handwritten signature of Natalie K. Walford, dated 8/9/07.

/Sikha Roy/

8/9/07

Primary Examiner, AU 2879

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